

How Will We Fix Education?

WARNING: I'm a seer, not a scientist; I'm an entertainer, not an expert. With a sword.

[A note about the word will (and not should) in the title. I was raised a humanist and am proud to be one, but I try to conduct my "scientific" thinking as a determinist. And that means I'm not giving advice here; I'm predicting where I think we'll end up.]

Abstract

Everyone has a fix for education and every single one of them is an exercise in deck chair rearrangement. But not this one. You'll agree by the end. I guarantee it. My fix is not a quick one, but the idea is simple and the aim is true. Once you see it, it will be obvious that this is how things must work themselves out.

In fact, I can sum it up right here. It's a two-pronged approach. (1) Define *exactly* what is to be mastered by creating publicly available tests *before* instruction begins. (2) Switch the emphasis, especially in primary school, from knowledge acquisition to attention mastery.

You may have to read a bit further to understand why that idea is Nobel worthy, but you're already in possession of the entire idea: dispel the fog of knowledge and sharpen the tools for navigating it.

Teaching To The Test

If you're not familiar with the phrase "teaching to the test", it's a slur hurled at teachers and administrators. At least here in the USA it is. But the question we should be asking is: why aren't the slurs being hurled at the test?

The Rights of Children

The ubiquitous and oppressive uncertainty of never knowing exactly what's required to satisfy the adults in one's life is the bane of youth the world over. Every student should know *exactly* what is required for the demonstration of the mastery of the material, and should have their own time immediately returned to them once it's been shown.

Just because we all have to endure the drudgery of school doesn't mean it's ethical to continue sentencing all children to 10 years of whimsical psychological hard labor and strict obedience. Some day soon we'll wake up to this injustice and fix it by treating children as fully-credentialed humans who have every right to know *exactly* what is required of them before they set foot in a school.

When we do that, it will be by offering to the indentured educational inmates *legally-binding contracts* which will serve to set them free once they've jumped through all the hurdles in the correct order. Those contracts will be the tests we write.

We don't yet have such a contract-by-test education system because our social justice warriors are currently tied up with gender issues. But I'm telling you, it's coming. Because it must come. School is day prison for the young. Your future canceled self will wish you hadn't argued that it wasn't.

Precisely-defined curricula are definitely coming because they will make for a better society, one that can create, fund and equip a military that beats other militaries. That might sound crude—jumping straight to the bottom line like that—but that's what we're always optimizing for, what our social justice warriors are always pushing for, whether they register it consciously or not. In order to survive, all societies must be constantly working to surface a little more latent (and typically cruelly oppressed) talent.

How School Should Work

Let's imagine a school system that has the tests I'm describing in place. And let's say that our school system is going to require all students to pass a physics exam upon graduation. (I like physics, so I'm using it as my example subject. Feel free to read in your own favorite subject.) The version of the physics final exam the high school student will be required to pass for graduation will be the very same one that is in effect *on the day the student enters high school*. Regardless of how much physics changes in the intervening years, the test cannot change for that student. Changing it mid-stream would be moving the goalposts.

Let's further specify that our curriculum has a required physics class *every year*. (In grade one the class will be called *Clumping and Snapping* and will feature squishy Lego blocks with magnets in them.) Therefore there will be annual physics final exams. Passing one of those exams *at any point* in the school year—including on its first day—frees the student from attending physics classes for the rest of that year. But the student must continue to pass the final exam *every week* until the end of the year, or they're right back in class. (The test will not be the same every time. We discuss this below.)

The class time between the successfully-completed weekly annual exams must be returned to the student. While the student may be required to be on school grounds, to refrain from disturbing others and to refrain from engaging in dangerous or anti-social activities, **no additional requirements may be placed on that time.** The student can play games, chat with friends, study, sleep, read, write, dance, meditate—whatever. Their time is their time.

This fine-grained and transparent spelling out of the exact requirements for winning back one's own time is the winning formula for education. Students will be highly motivated to pass the tests as soon as possible and, once they do, help spring their friends by tutoring them.

We'll return to further benefits of this approach later—and to all the arguments *against it* that I can think of—but let's turn now to the other main requirement, which was: *Switch the primary emphasis, especially in primary school, from knowledge acquisition to attention mastery.*

Mastery of the Attention is the Primary Goal

The ability to place a single thought in short-term memory and hold it there indefinitely is the one skill a primary school student must walk away with, or else the school system has failed that child. The ability to keep something locked in short-term memory is the stirrup up onto the attentional horse. It's the secret to lifelong learning and to a hopeful outlook.

Once the child can hold onto a slot in short-term memory, we can fill it with self-confidence, which is nothing more than an ability to focus without fear. A student with an ever-present and fearless focus is a knowledge anteater. We can let it run free.

The fear that shackles the student almost always arises from incomplete or incorrect prior knowledge. The whole explicitly-defined-tests approach I just outlined is there to maximize self-confidence. As the student moves through the curriculum, at every point she will have demonstrated to everyone, especially to herself, that she knows everything there is to know and has mastered it—which is all that's required for the baby step she'll take today.

The stirrup I speak of is created with the arts, a point which will be explored in the next section. But first let me explain exactly what I mean by the title of this section: Mastery of the Attention is the Primary Goal.

To the extent that we can manage it comfortably, both the child's mind and body should be strictly monitored during learning. We must know precisely when self-confidence drops below some explicitly-defined level, and the learning must stop while the lagging self-confidence is analyzed and repaired. Learning while confused is a type of psychological torture whose minimization we should pursue as our #1 priority.

We'll need to figure out if the difficulty the student is experiencing is due to the teaching materials, or social anxieties, or something else we can potentially address and remedy. If it is, then the requirement is to bring the child back to the mental health of self-confidence before proceeding, and *not* to push them along deeper and deeper into confusion so they'll "at least learn *something*".

If the child's struggles are *not* something we can address, we'll need to bring in the psychological experts to investigate the child's situation, and together with her, discover how to best navigate the knowledge with her particular mind.

Tying it All Together

Music Class

Let's say that in our school, in addition to 12 years of physics, students are also required to take 12 years of music. Music class in Grade 1 is Introduction to Singing. The child will hear something sung and will be required to repeat it with her own voice to within some (specifically-defined) degree of accuracy. She'll do this while experiencing clear visual feedback that shows just where her voice is out of sync with the expectation. She will adjust her voice accordingly as she practices until she easily masters it.

For the child, this work is, as they say, child's play. Nothing is easier for a child to learn than to sing, when properly instructed. When brought along slowly day-by-day, the student will breeze through all her music classes across all 12 years without even trying. At high school graduation she'll effortlessly and flawlessly reproduce any music she hears or reads, both with her voice and with one or more musical instruments. She'll sing harmony in her sleep.

If the child is a prodigy, or is simply learning more quickly at home, she can move ahead as far as she likes, including taking the final exam for the year. If she *does* take the final and pass it, the scheduled class time becomes her own, but, again, every week she'll be required to re-demonstrate her prowess by passing the final exam once again.

The Arts are Mind-Body Pairings

The true value of the art to the artist is that it requires her attention to be focused on *the physical world* for extended periods of time. This ability to hold on tight to a mind-body link is exactly what "the stirrup" is. In other words, the self-confidence we want the child to hold in short-term memory throughout the learning process is a *physical* thing. Self-confidence is a mood that is felt throughout the body. It's the feeling of the absence of anxiety. It's the holy grail of learning—of living, really—and the arts pave the way to it.

The Big Picture

Each generation deludes its children into seeing a world that's a little bit "better" than what their parents perceive it to be. "Better" is hard to define, of course, but each generation leans into what it thinks the world most needs. For example, the Boomers and Gen Xers instituted a policy we can think of as "trophies equally deserved by all participants". Their children didn't know how weird this was. They thought it was normal. When they later emerged into a world where it was *not* normal, they set about putting the world to right. Everywhere we look they're striving to bring about a world that minimizes feelings of inferiority. Their tactics are often crude and harsh (just ask anyone named Karen), but we all benefit in the end.

Likewise, a generation of children raised to expect knowledge to be scrubbed of its vagueness will dedicate themselves to extending *that* work. They'll care so much about perfecting education that they'll be committed to tracking it, so as to improve it more and more objectively.

As a society, we'll all dovetail into a much better picture of what knowledge there actually is and who has mastered which parts of it. That will spawn better research, better teaching materials, better people, and don't you know I need to say it, better bombs.

And don't worry, we won't all be forced to learn the same things, we'll just make it easier to learn whatever it is we're taught. Your curriculum is as good as mine, but are your tests?

We've reached a point in our history where technology could vastly improve how we mold our children's minds, how we shape their hopes and fears, but we've yet to apply it.

All the Reasons Against

Passing A Test About Something is Fundamentally Different From Understanding That Thing

No it's not. If you believe this, you're failing to understand what a good test is.

It's Too Hard

Abolishing slavery was a bit harder and we managed that. WWII also comes to mind.

It's Not Worth The Effort

I agree with this one. I think this is exactly the reason why it hasn't happened yet. Our approach to education *has* been good enough so far. But as our attention spans progressively shrink over the years, and we start drowning in our minds, it will stop being good enough. Alarm bells will go off which will cause us to look in the direction of the children, where the problem is best solved.

They'll Just Memorize the Answers

Well, if it's just a bunch of facts, memorization is exactly what we want. All we have to do is make explicit exactly what those facts are. It's not that hard to memorize and retain information when it's clearly spelled out. It's the fuzzy, dispersive nature of what we teach that breeds the doom and dread of facts. The child who is forced to ask, "Will this be on the test?" is being abused.

If the subject matter is abstract, we can randomize the test so that it's completely different every time and still be accurately testing the same skill set. Randomization defeats memorization.

If a test *can't* be easily randomized, then we can compile a pool of tens of thousands of questions to randomly generate the test from. If the student can memorize the answers to that many questions, then all the power to them. They were clearly cut out for something bigger than logic.

Some Things Can't Be Tested

I have two profound things to say about this:

If it can't be tested, then it shouldn't be graded. Take creative writing. I'm not saying there shouldn't be a space in schools where creative writing is encouraged and allowed to flourish, but it shouldn't be *evaluated* if passing can't be explicitly defined and done by a computer. Relying on a teacher's opinion of the moment for evaluation is anathema to the well-defined obstacle course we'll be trying to construct. A teacher's opinion is a quicksand of power games and favoritism that must be slogged through by the student. And, anyway, most teachers would rather *not* have that power.

You'd be surprised what can be tested. Let's take something as slippery as "the social graces". Let's say that at our school every child must be able to gracefully handle the customer service calls for some imaginary company they work for. Our AI is already at the point where it can randomly generate, with one hand, the callers (some of them irate) and, with the other, judge the appropriateness of the student's responses.

As with all other tests in the school, the students would have unlimited access to the test and will easily figure out what qualifies as appropriate behavior (and what doesn't) through simple trial and error.

The Tests Will Be Hacked

Yes, they will be. And that's exactly what we want. Every hack helps improve the tests.

We *want* the young boys trying things like, "Yes, ma'am, that's correct, and at the end of this call, if you don't mind, I'd like to suck on your little titties." Because if your test isn't catching that, your test sucks.

Yes, hacking should be encouraged, and handsomely rewarded, even if several years' worth of kids pass a course "undeservedly" while the kinks are worked out.

Maybe early in the effort a test is designed that doesn't require a year's worth of study to pass. Maybe, for whatever reason, all students pass it in a month and get to goof off for the rest of year. Well, we (the administration) f'ed up. But we learned something. We'll do better next year.

Maybe there's a math test that takes "424242" as a correct answer for every question because somebody left in a back door. Again, we f'ed up. No reworking of the test is allowed during the school year for that year's students. We can *offer* a fixed test, but not require it.

I'm not joking here. We want—we *need*—students who are highly motivated to minimize their own pain in order for us to shape our tests. Like everything else in the universe that evolves, tests are antifragile.

Summarizing now, if students can find a way to pass the test without learning the material, then they have earned the right to the reclamation of their time. They'll probably pay for it the following year, but they must have the power to make that choice. Students without power are very poor students indeed.